

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) An endo-type  $\alpha$ -L-fucosidase having the following physical and chemical properties:

(I) acting on a sulfated fucan derived from a sea cucumber to hydrolyze an  $\alpha$ -L-fucosyl bond and convert the sulfated fucan into smaller molecules;

(II) having an optimal pH of about 7 to 9; and

(III) having an optimal temperature of about 25 to 45 C.

2. (original) A method for producing the endo-type  $\alpha$ -L-fucosidase defined by claim 1, the method comprising culturing a bacterium of the genus *Furoidanobacter* capable of producing the endo-type  $\alpha$ -L-fucosidase defined by claim 1, and collecting the enzyme from the culture.

3. (original) A sulfated fucan sulfatase having the following physical and chemical properties:

(I) acting on a sulfated fucan derived from a sea cucumber to hydrolyze a sulfate ester bond, release sulfuric acid, and promote conversion of the sulfated fucan derived from a sea cucumber into smaller molecules in the presence of the endo-type  $\alpha$ -L-fucosidase defined by claim 1 as compared with conversion achieved by allowing the endo-type  $\alpha$ -L-fucosidase defined by claim 1 to act alone;

(II) having an optimal pH of about 6 to 8; and

(III) having an optimal temperature of about 20 to 45 C.

4. (original) A method for producing the sulfated fucan sulfatase defined by claim 3, the method comprising culturing a bacterium of the genus *Fucoidanobacter* capable of producing the sulfated fucan sulfatase defined by claim 3, and collecting the enzyme from the culture.

5. (original) A method for producing a sulfated fucan oligosaccharide, the method comprising allowing the endo-type  $\alpha$ -L-fucosidase defined by claim 1 to act on a sulfated fucan, and obtaining a sulfated fucan oligosaccharide from the reaction.

6. (original) The method according to claim 5, wherein the endo-type  $\alpha$ -L-fucosidase is allowed to act in the presence of sodium chloride.

7. (original) A sulfated fucan oligosaccharide which is obtainable by the method defined by claim 5.

8. (currently amended) A method for producing a sulfated fucan oligosaccharide, the method comprising allowing ~~the~~ an endo-type  $\alpha$ -L-fucosidase having the following physical and chemical properties:

(I) acting on a sulfated fucan derived from a sea cucumber to hydrolyze an  $\alpha$ -L-fucosyl bond and convert the sulfated fucan into smaller molecules;

(II) having an optimal pH of about 7 to 9; and

(III) having an optimal temperature of about 25 to 45 C, ~~defined by claim 1~~

and the sulfated fucan sulfatase defined by claim 3, to act on a sulfated fucan, and obtaining a sulfated fucan oligosaccharide from the reaction.

9. (original) The method according to claim 8, wherein the endo-type  $\alpha$ -L-fucosidase and the sulfated fucan

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sulfatase are allowed to act in the presence of sodium chloride and/or a calcium ion.

10. (original) A sulfated fucan oligosaccharide which is obtainable by the method defined by claim 8.